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| APPLICATION NO.                                                               | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-------------------------------------------------------------------------------|-------------|----------------------|---------------------|------------------|
| 10/605,575                                                                    | 10/09/2003  | Haochuan Jiang       | GEMS 0216 PA        | 2574             |
| 27256                                                                         | 7590        | 06/02/2005           | EXAMINER            |                  |
| ARTZ & ARTZ, P.C.<br>28333 TELEGRAPH RD.<br>SUITE 250<br>SOUTHFIELD, MI 48034 |             |                      | HOFFMANN, JOHN M    |                  |
|                                                                               |             |                      | ART UNIT            | PAPER NUMBER     |
|                                                                               |             |                      | 1731                |                  |

DATE MAILED: 06/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/605,575

Applicant(s)

JIANG, HAOCHUAN

Examiner

John Hoffmann

Art Unit

1731

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 17-22 are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Election/Restrictions*

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-16, drawn to a method of manufacturing a collimator assembly, classified in class 65, subclass ~~411~~ 393
  - II. Claims 17-22, drawn to a collimator assembly, classified in class 378, subclass 149.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process

(MPEP § 806.05(f)). In the instant case the process can be used to make other than a collimator, such as a photo detector, a photomultiplier or a photonic crystal

3. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Thomas E. Donohue on 2/22/05 a provisional election was made with intent to traverse to prosecute the invention of Group I, claims 1-16. Affirmation of this election must be made by applicant in replying

Art Unit: 1731

To this Office action. Claims 17-22 are withdrawn from further consideration.

Whereas there was a paper dated 25 April, 2005 from applicant which has a traversal, such is not complete because it does not include confirmation of the elected invention. It is noted that the restriction requirement has not been made final, thus applicant is free to perfect the traversal. Applicant is still required to confirm that group I was elected.

Alternatively or additionally, review of the Office action/restriction of 3/25/2005 suggests that the requirement was improperly presented. Note the specific examples included on prior page.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 5-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

From MPEP 2173.05(h):

Alternative expressions are permitted if they present no uncertainty or ambiguity with respect to the question of scope or clarity of the claims. One acceptable form of alternative expression, which is commonly referred to as a Markush group, recites members as being "selected from the group consisting of A, B and C." See *Ex parte Markush*, 1925 C.D. 126 (Comm'r Pat. 1925).

Art Unit: 1731

Presently, claim 6 has a group which is very similar to the above accepted form, but there is no indication that the group is "consisting of" the members. Therefore it is impossible for anyone to tell if applicant's group is open or closed to additional members - and thus the claim presents uncertainty or ambiguity with respect to the question of scope of the claim. If the above "acceptable form" is not desirable for Applicant, Examiner can be telephoned for other expressions.

Claim 5 is not understood, because a powder is not a tube. If something is sintered, it is no longer a powder. It is unclear as to what characteristics of a powder must remain for it to be still considered a powder. For example it is unclear if the sintered tube must only be sintered to the degree that it still has porosity. More importantly it is unclear what is meant by having tungsten sintered "into" glass.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Sink 4853020.

The placing step is disclosed at 34-36; it is deemed that the only way to make the Sink tube/rod structure is by inserting the core into the tube. The reducing step: col. 2,

Art Unit: 1731

lines 38-43. The assembly step: col. 2, lines 44-50. The dissolving step: col. 3, lines 4, lines 10-12 and elsewhere.

It is noted that Sink does not use the term "collimator". It is deemed that such language is an intended use that does not define structurally over the Sink features. It is presumed that Sink's product could collimate light because the device/method is substantially the same as applicants'.

A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

Claim 2 is clearly met.

Claim 3: see col. 2, lines 19-21 which discloses that the glass rod and glass tube have the same softening point. Examiner gives Official Notice that "glass transition temperature" is synonymous with "softening point."

Claim 4: Z is the symbol for atomic number (see Grant and Hack's Chemical Dictionary). Examiner gives Official notice that Corning 8161 (see Sink col. 2, lines 28-29) contains lead. Lead has a higher atomic number (81) than a majority of other elements. Therefore it is deemed to be a high-Z glass. Examiner is not aware nor could he find any definition for high-Z glass.

Claim 6 is clearly met.

Claims 7-8: see col. 2, line 51- to col. 3, line 62. As to claim 8's "block": it is deemed that Sink's assembly is a block in as much as Applicant's is. Examiner is unaware of any definition for "block" which would include Applicant's structure yet exclude Sink's.

Claim 9: see col. 4, lines 7-8. Whether a depth is "desired" or not is not deemed to be a patentable distinction since desire is a mental feature, not manipulative.

Claim 10: Col. 4, lines 10-12.

Claim 11 is clearly met.

Claims 12-16 are met for the reasons given above.

Claim 5: It is examiner's experience that when one tries to sinter tungsten (by itself) in normal air, the tungsten oxidizes which results in tungsten oxide gas. Thus, if one were to make a tube, by using a compacted tungsten core, surround it with

Art Unit: 1731

powdered silica glass, then sinter it, what would result is the tubular glass: the core being vaporized away. The tube would presumably not maintain any residue of the tungsten. It is deemed that this is what Applicant is attempting to claim. There is no specific embodiment disclosed. As indicated above, if the powders are sintered, then no "powder" remains. Since no powder remains, it does not require any "tungsten powder" to remain. Examiner presumes that claim 5 is directed to defining the tube by the method used to create it. At first Examiner thought the claim was directed to mixing the two powders and sintering them. However, from MacCragh 3713816, doing such would create a cermet, thus such would not appear to be a reasonable interpretation. Examiner is well aware that the above interpretation might not be reasonable; if so, applicant should point out why it is unreasonable, what is the reasonable way to interpret claim 5, and why such reasonable interpretation is how one of ordinary skill would interpret it. Sink reads on this above interpretation, because on looking at the Sink tube would be unable to discern whether there was ever a tungsten core or not. Of course, if the claim a step of sintering with the tungsten, then it is deemed that such would define over the prior art (because the claim would no longer have the product by process aspect to it)

The courts have been holding for quite some time that "—in spite of the fact that a product-by-process claim may recite only process limitations, it is the product which is covered by the claim and not the recited process steps." (In re Hughes, 182 USPQ). Also, "—patentability of a claim to a product does not rest merely on a difference in the method by which that product is made. Rather, it is the product itself which must be new and unobvious." (In re Pilkington, 162 USPQ 147).



The Patent Office bears a lesser burden of proof in making out a case of prima facie obviousness for product-by-process claims because of their peculiar nature. In re Fessmann, 489 F.2d 742, 744, 180 USPQ 324, 326 (CCPA 1974). Once the examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. In re Marosi, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983).

### ***Conclusion***

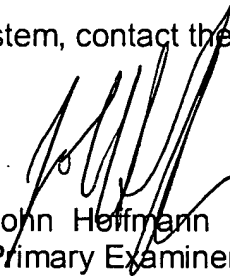
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Jensen, Patrick and Beasley are cited as being substantially the same as Sink. Brown is cited as showing soften temperatures and glass transition temperatures are the same thing. Morgan is cited as showing that Tungsten sinters at 2100 C – a point well above the temperature that glass becomes fluid – well beyond what permits glass to be sintered.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Hoffmann whose telephone number is (571) 272 1191. The examiner can normally be reached on Monday through Friday, 7:00- 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1731

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
John Heffmann  
Primary Examiner  
Art Unit 1731

5-11-05

jmh